Previous Doc Next Doc Go to Doc#
First Hit

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L25: Entry 63 of 97 File: JPAB Jul 23, 1985

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TITLE: TEMPERATURE MEASURING METHOD OF METALLIC PLATE BY ELECTROMAGNETIC INDUCTION

PUBN-DATE: July 23, 1985

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ABSTRACT:

PURPOSE: To execute exactly a measurement in non-contact, by applying an energizing voltage of a low frequency so that the depth of penetration of an electromagnetic field becomes larger than the plate thickness of a metallic plate, obtaining only information of an electric resistivity from the impedance variation of a coil, and deriving a temperature.

CONSTITUTION: An AC voltage of a low frequency (f) is applied to an energizing coil 12A from an oscillator 20, by which the energizing coil 12A generates a primary magnetic field. By this primary magnetic field, and eddy current is generated in a metallic plate 10, and a detecting coil 12B detects a secondary magnetic field. A difference between an induced electromotive force induced in the detecting coil 12B and an induced electromotive force induced in a comparing coil 12C is amplified by an amplifier 22, and it becomes a signal input es of the first and the second detectors 24, 26. An output which has brought the signal input es to a synchronous detection by the first reference input er1 is measured by the first voltmeter 32, and also an output which has been brought to a synchronous detection by the second reference input er2 by the second detector 26 is measured by the second voltmeter 34.

Previous Doc Next Doc Go to Doc#